Table 2. Summary of Studies Examining the Association between VDR Genotype and Prostate Cancer.

Ethnicity	Cases	Controls	Results		Comments	Reference
Caucasian	96 consecutive prostatectomy cases identified at hospitals. Age not specified.	162 urology clinic patients presenting with BPH or impotence and no HX of cancer other than non-melanoma skin cancer. Age not specified.	TT/Tt tt	1.0 (referent) 0.3 (0.1, 0.7)	No exposures assessed. Genotype not correlated with grade, stage, or age at diagnosis.	87
Caucasian	57 cases diagnosed between 1991-1992 identified by SEER registry. Mean age=58 yrs (range, 51-68).	169 controls enrolled in a bladder cancer study. Mean age=58 yrs.	LL LS SS	1.0 (referent) 0.2 (0.1, 0.8) 0.2 (0.1, 0.8)	No exposures assessed. Stronger association with advanced cancer.	88
Caucasian (90%)	41 cases of fatal, metastatic PCa (20 hereditary). Mean age at diagnosis=64 yrs.	41 urology patients who participated in a screening program for PCa. No evidence of PCa on PSA tests, DRE, and/or needle biopsy. Mean age=62 yrs.	TT/Tt tt LL/LS SS	1.0 (referent) 1.4 (0.4, 4.5) 1.0 (referent) 1.3 (0.4, 4.3)	No exposures assessed. Similar results for hereditary and non-hereditary cases.	91
Caucasian (>95%)	372 cases in the Physicians Health Study ascertained by questionnaire and confirmed by medical chart review. Age 40-84 yrs.	591 controls selected from the same cohort who had not had a prostatectomy and not developed PCa at the time the case was diagnosed. Cases & controls were matched on age & smoking status. Age 40-84 yrs.	bb Bb BB TT Tt tt	1.0 (referent) 0.9 (0.7, 1.2) 0.9 (0.6, 1.3) 1.0 (referent) 0.9 (0.7, 1.3) 0.9 (0.6, 1.4)	57% (0.19, 0.98) reduction in risk for the BB vs bb genotype among men with low 25(OH)D levels (p=0.04 for interaction). Similar interaction for TaqI.	90
Caucasian (92%)	77 biopsy proven cases identified through urology and radiation oncology practices. Age ≥ 50 yrs.	183 community controls matched on age, race, and zip code. Men with history of cancer (other than non-melanoma skin cancer), prostate disease, or prostate surgery were excluded. Age ≥ 50 yrs.	TT Tt tt LL LS SS	1.0 (referent) 0.6 (0.3, 1.2) 0.9 (0.4, 2.0) 1.0 (referent) 0.7 (0.3, 1.4) 1.0 (0.4, 2.0)	No exposures assessed. Similar results for advanced PCa.	94

BPH, indicates benign prostatic hypertrophy; SEER, Surveillance, Epidmiology, and End Results; PCa, prostate cancer; PSA, prostate specific antigen; DRE, digital rectal examination; 25(OH)D, 25-hydroxyvitamin D.

Table 2 (Continued). Summary of Studies Examining the Association between VDR Genotype and Prostate Cancer.

Ethnicity	Cases	Controls	Results		Comments	Reference
Caucasian	132 histologically confirmed cases of PCa identified consecutively at two hospitals. Cases were considered sporadic if they did not have an affected first-degree relative and ≤1 affected distant relative. Mean age=68 yrs (range, 46-90).	105 controls without evidence of PCa on PSA tests and DRE. Mean age= 71 yrs (range, 64-86).	TT Tt tt LL LS SS	1.0 (referent) 0.5 (0.3, 0.9) 1.2 (0.5, 2.7) 1.0 (referent) 2.3 (1.0, 5.0) 1.6 (0.7, 2.6)	No exposures assessed. No association with FokI genotype.	93
African-American	151 new diagnosed cases in the Hawaii-Los Angeles Multi-Ethnic cohort were ascertained through linkage to the SEER registry. Mean age=67 yrs.	174 non-diseased cohort members were randomly selected as controls. Mean age=64 yrs.	bb Bb BB LL LS SS	1.0 (referent) 1.0 (0.5, 2.1) 0.9 (0.4, 1.8) 1.0 (referent) 1.4 (0.6, 3.1) 1.1 (0.5, 2.4)	No exposures assessed. BB genotype associated with a 2.6-fold (1.0, 6.7) greater risk of advanced PCa compared with bb genotype. BsmI genotype not associated with localized PCa.	89
Japanese	66 cases. Ascertainment methods not described. Mean age=68 yrs (range, 57-84).	60 urology patients without evidence of PCa on PSA tests and DRE. Mean age=71 yrs (range, 64-86).	TT Tt/tt	1.0 (referent) 0.8 (0.3, 1.6)	No exposures assessed. Men with metastatic disease and t allele had better progression-free survival than men with the T allele.	92
Japanese	222 histologically confirmed cases treated at community hospitals. Mean age=72 yrs.	128 patients admitted to community hospitals because of nonurological diseases. None had voiding symptoms or prostate enlargement by DRE, and all had normal serum PSA levels. Mean age=74 yrs.	bb Bb/BB	1.0 (referent) 0.3 (0.2, 0.5)	No exposures assessed. ApaI and TaqI genotype were not associated with PCa.	95
Japanese	100 patients with biopsy confirmed PCa identified through hospitals. Mean age=73 yrs.	202 patients with BPH. PCa excluded by serological, physical, and/or histological examination. Mean age=71 yrs.	TT Tt tt LL LS SS	1.0 (referent) 1.0 (0.6, 1.9) 0.6 (0.2, 2.6) 1.0 (referent) 1.0 (0.6, 1.9) 0.6 (0.2, 2.6)	No exposures assessed. Analyses stratified by stage of disease produced similar results.	96

BPH, indicates benign prostatic hypertrophy; SEER, Surveillance, Epidmiology, and End Results; PCa, prostate cancer; PSA, prostate specific antigen; DRE, digital rectal examination; 25(OH)D, 25-hydroxyvitamin D.